

# **HONDA** WATER PUMP **WA20X/WA30X**

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**OWNER'S MANUAL**

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Thank you for purchasing a Honda water pump.

This manual covers operation and maintenance of the WA20X and WA30X water pumps. All information in this publication is based on the latest product information available at the time of approval for printing. Honda Motor Co., Ltd. reserves the right to make changes at any time without notice and without incurring any obligation.

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This manual should be considered a permanent part of the pump and should remain with the pump when it is sold.


Pay special attention to statements preceded by the following words:

** WARNING** Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.

**CAUTION:** Indicates a possibility of personal injury or equipment damage if instructions are not followed.

**NOTE:** Gives helpful information.

If a problem should arise, or if you have any questions about the pump, consult an authorized Honda dealer.

** WARNING** This Honda water pump is designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's Manual before operating the pump. Failure to do so could result in personal injury or equipment damage.

Illustrations herein are mainly based on model WA20X.

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# 1. WATER PUMP SAFETY

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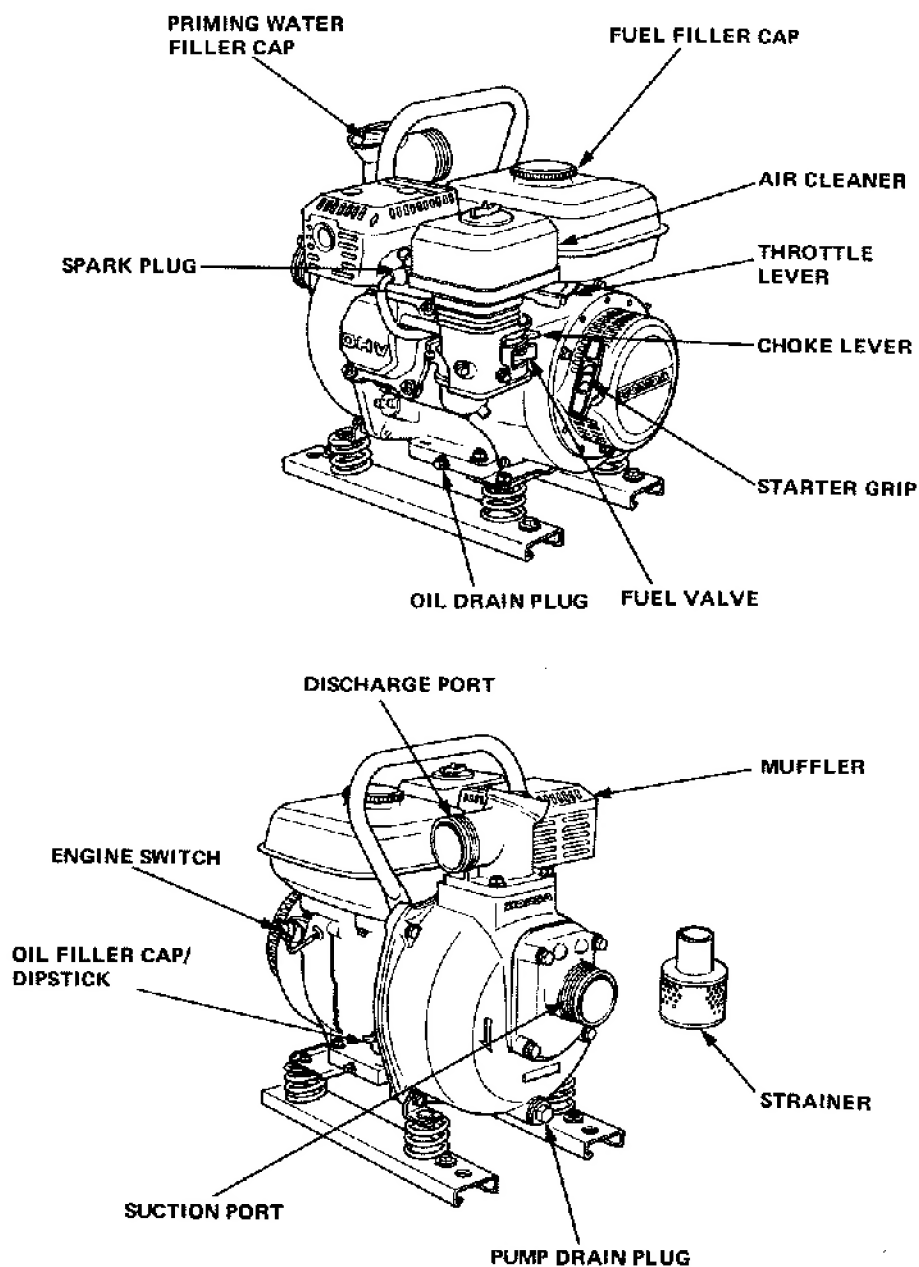
## WARNING

To ensure safe operation—

- For safety, never pump flammable or corrosive liquids such as gasoline or acid. Also, to avoid pump corrosion, never pump sea water, muddy water, chemical solutions, or caustic liquids such as used oil, wine, or milk.
- Place the pump on a firm, level surface. If the pump is tilted or overturned, fuel spillage may result.
- To prevent fire hazards and to provide adequate ventilation, keep the pump at least 1 meter (3 feet) away from buildings and other equipment during operation. Do not place flammable objects close to the pump.
- A spark arrester is available as an optional part for this pump. It is illegal in some areas to operate an engine without a spark arrester. Check local laws and regulations before operating.
- Know how to stop the pump quickly, and understand the operation of all controls. Never permit anyone to operate the pump without proper instructions.
- Do not allow children to operate the pump. Keep children and pets away from the area of operation.
- Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks where the pump is refueled or where gasoline is stored. Refuel in a well-ventilated area with the engine stopped. Do not overfill the tank. Make sure that the filler cap is closed securely.
- Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gasses. Never run the pump in a closed garage or confined area.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Let the engine cool before storing the pump indoors.

## 2. COMPONENT IDENTIFICATION

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### 3. PREPARATION

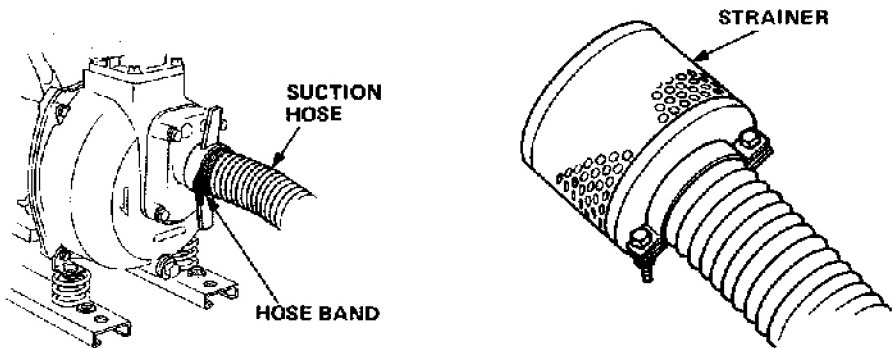
#### 1. Connect the suction hose.

Use a reinforced-wall or wire braided hose to prevent suction collapse. Since the pump self-priming time is directly proportional to hose length, a short hose is recommended.

Secure the hose with the hose band.

#### CAUTION:

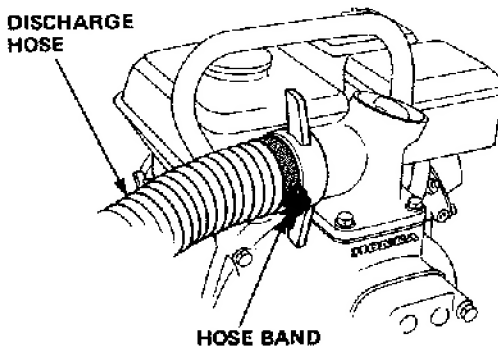
- Always use the strainer with the suction hose.
- Gravel or debris sucked into the pump will cause serious impeller damage.



#### 2. Connect the discharge hose.

When using a fabric hose, always use a hose band to prevent the hose from disconnecting under high pressure.

**NOTE:** A short, large-diameter hose will provide lower fluid friction and improve efficiency.

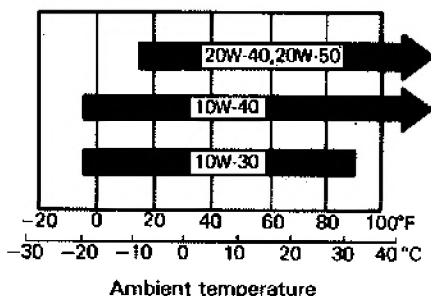


### 3. Check the engine oil level.

#### CAUTION:

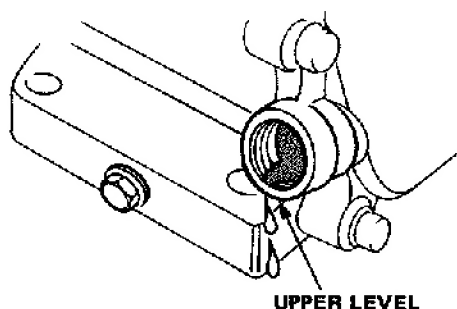
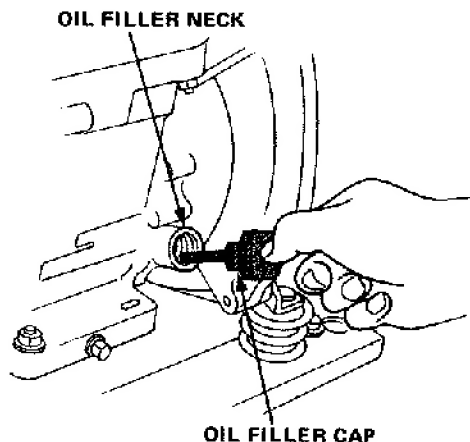
- Engine oil is a major factor affecting engine performance and service life. Non-detergent or vegetable oils are not recommended.
- Be sure to check the engine on a level surface with the engine stopped.

Use Honda 4-stroke oil, or an equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for Service Classification SE or SF, (Motor oils classified SE or SF will show this designation on the container.) SAE 10W-40 is recommended for general, all-temperature use.



Remove the oil filler cap/dipstick and wipe it clean. Insert the filler cap/dipstick into the oil filler neck, but do not screw it in. If the level is low, fill to the top of the oil filler neck with recommended oil.

**CAUTION:** Running the engine with insufficient oil can cause serious engine damage.



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#### 4. check the fuel level.

Use any regular grade automotive gasoline (unleaded gasoline is preferred) with a pump octane rating of 86 or higher.

Never use an oil/gasoline mixture or dirty gasoline. Avoid getting dirt, dust or water in the fuel tank.

**CAUTION:** Gasoline substitutes are not recommended; they may be harmful to the fuel system components.

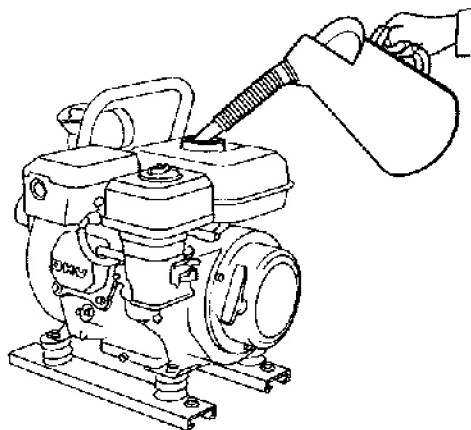
#### WARNING

- Gasoline is extremely flammable and explosive under certain conditions. Refuel in a well ventilated area with the engine stopped.
- Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored.
- Do not overfill the tank and make sure the filler cap is securely closed after refueling.
- Be careful not to spill fuel when refueling. Fuel vapor or spilled fuel may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

Fuel tank capacity

WA20X . . . 2.5 lit. (0.66 US gal, 0.55 Imp gal)

WA30X . . . 3.6 lit. (0.95 US gal, 0.79 Imp gal)



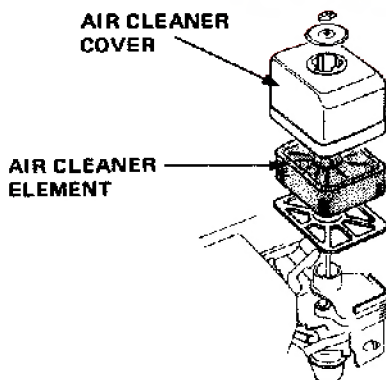


5. Check the air cleaner element.

Remove the wing nut, washer and air cleaner cover.

Check the element for dirt or obstruction.

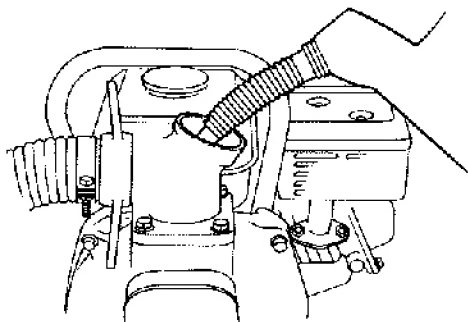
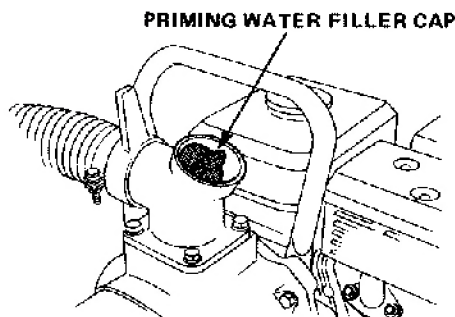
Clean the element if necessary (see page 13).



6. Check the priming water.

While the pump will self-prime with a minimum of 4.3 liters (4.6 US qt) for the WA20X, and 6.2 liters (6.6 US qt) for the WA30X, it is recommended that the water chamber be kept full.

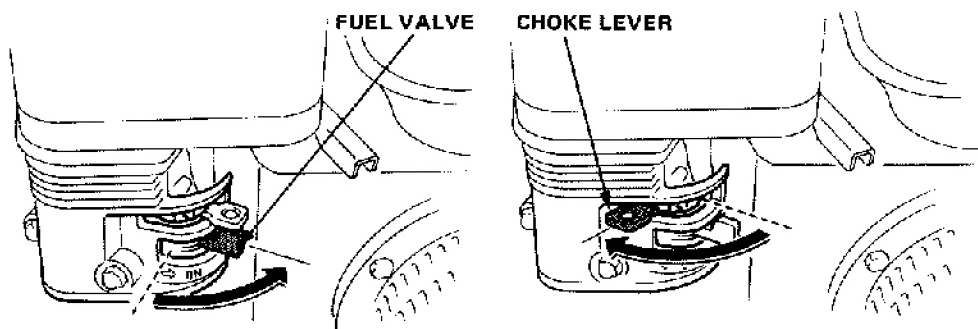
**CAUTION:** Never attempt to operate the pump without priming water or the pump will overheat. Extended dry operation will destroy the pump seal. If the unit has been operated dry, stop the engine immediately and allow the pump to cool before adding priming water.



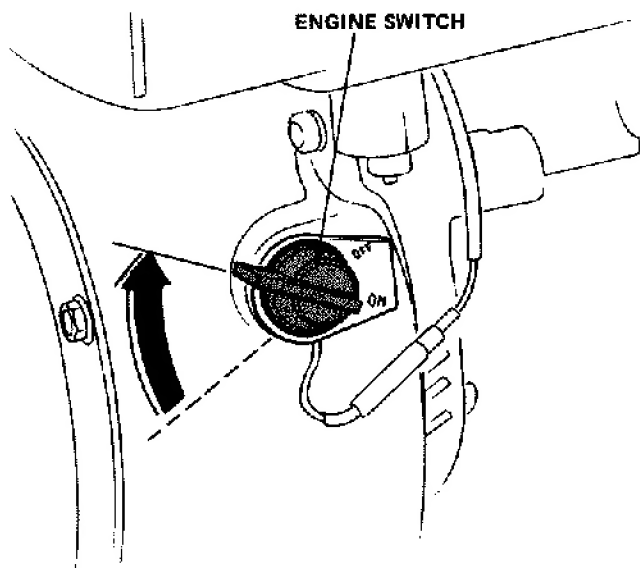
## 4. STARTING THE ENGINE

1. Turn the fuel valve ON.
2. Close the choke lever.

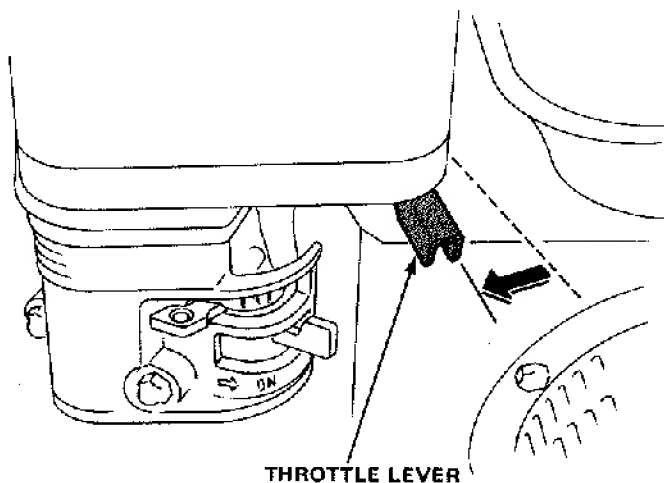
**NOTE:** Do not use the choke if the engine is warm or the ambient temperature is high.



3. Turn the engine switch to the ON position.

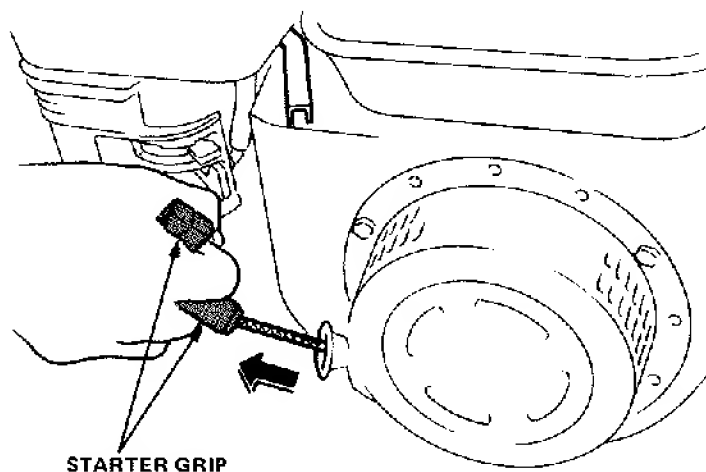


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4. Move the throttle lever slightly to the left.



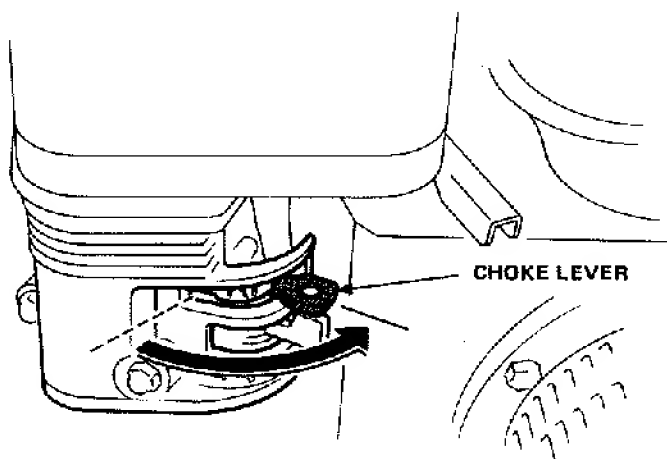
5. Pull the starter grip lightly until resistance is felt, then pull it briskly.

**CAUTION:** Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

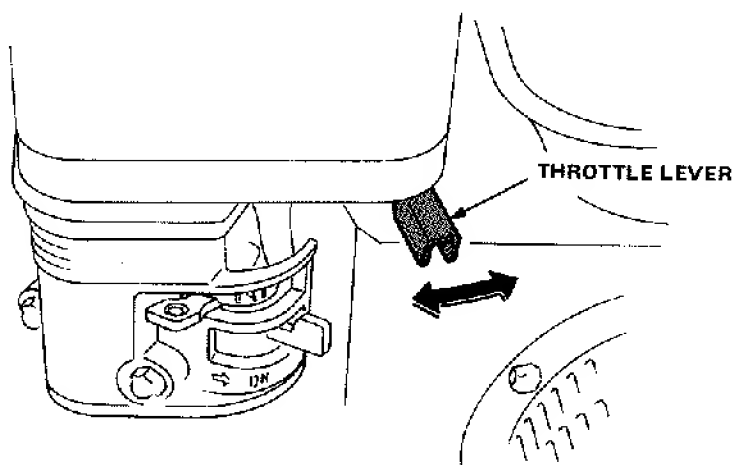


## 5. OPERATION

1. As the engine warms up, gradually open the choke.



2. Set the throttle at the desired speed.

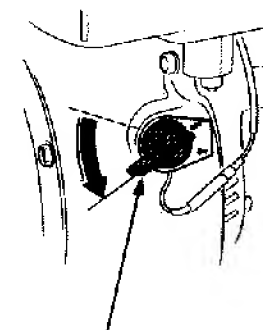
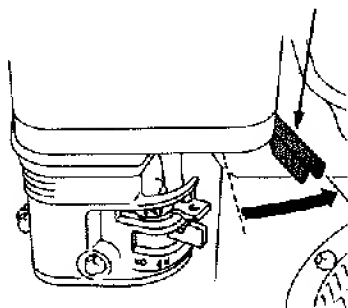


## 6. STOPPING THE ENGINE

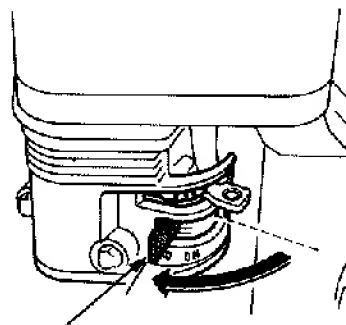
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1. Move the throttle lever fully to the right.
2. Turn the engine switch to the OFF position.
3. Turn the fuel valve OFF.

**THROTTLE LEVER**



**ENGINE SWITCH**



**FUEL VALVE**

### High altitude operation

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Performance will decrease, and fuel consumption will increase.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor and readjusting the pilot screw. If you always operate the water pump at altitudes higher than 6,000 feet above sea level, have your authorized Honda Water Pump dealer perform these carburetor modifications.

Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5% for each 1,000 foot increase in altitude. The affect of altitude on horsepower will be greater than this if no carburetor modification is made.

**CAUTION:** Operation of the Water Pump at an altitude lower than the carburetor is jetted for may result in reduced performance, overheating, and serious engine damage caused by an excessively lean air/fuel mixture.

**NOTE:** To stop the engine in an emergency, turn the engine switch to the OFF position.

## 7. MAINTENANCE

The purpose of the maintenance schedule and adjustment is to keep the engine in the best operating condition. Inspect or service as scheduled in the table below.

**WARNING** Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas.

### CAUTION:

- If the pump has been used with sea water, muddy water, etc., pump clean, fresh water immediately afterward to reduce corrosion or remove sediment.
- Use only genuine HONDA parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the engine.

### Maintenance Schedule

REGULAR SERVICE PERIOD		Each use	First month or 20 Hrs.	Every 3 months or 50 Hrs.	Every 6 months or 100 Hrs.	Every year or 300 Hrs.
ITEM Perform at every indicated month or operating hour interval, whichever comes first.						
Engine oil	Inspection	○				
	Change		○		○	
Air cleaner element	Inspection	○				
	Cleaning			○(1)		
Spark plug maintenance					○	
Tappet clearance adjustment						○(2)
Combustion chamber cleaning						○(2)
Fuel tank cleaning						○(2)
Spark arrester		Clean every 100 operating hours.				
Fuel line		Replace every 3 years.				
Impeller inspection						○(2)
Friction disc inspection						○(2)
Casing cover inspection						○(2)
Inlet valve inspection						○(2)

NOTE (1): Service more frequently when used in dusty areas.

(2): These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

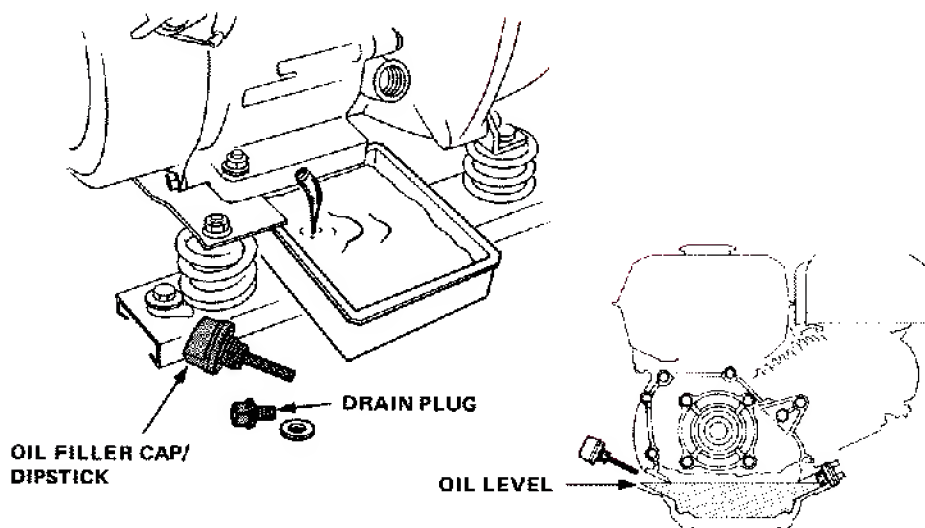
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## 1. Changing oil

Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Remove the oil filler cap, and drain the oil.
2. Reinstall the drain plug and tighten securely.
3. Refill with the recommended oil (see page 4) and check the level.

OIL CAPACITY: 0.6ℓ (0.63 US qt)



**CAUTION:** Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

**NOTE:** Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station for reclamation. Do not throw it in the trash or pour it on the ground.

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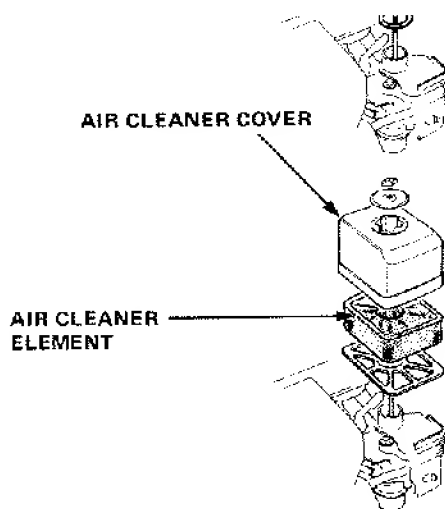
## 2. Air cleaner service

A dirty air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the pump in extremely dusty areas.

**WARNING** Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

**CAUTION:** Never run the pump without the air cleaner. Rapid engine wear may result.

1. Unscrew the wing nut, remove the air cleaner cover and remove the element.
2. Wash the element in a non-flammable or high flash point solvent and dry it thoroughly.
3. Soak the element in clean engine oil and squeeze out the excess oil.
4. Reinstall the air cleaner element and the cover.





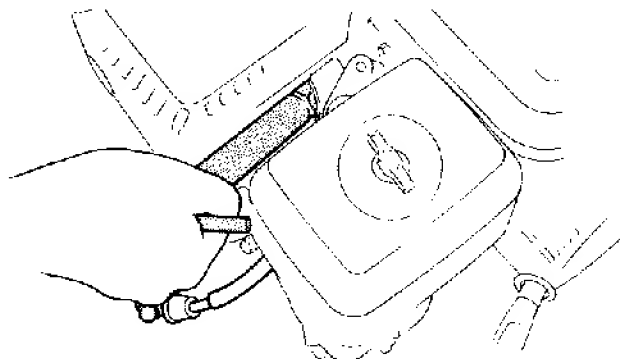
### 3. Spark plug service

Recommended spark plug: BPR6ES (NGK)  
W20EPR-U (ND)

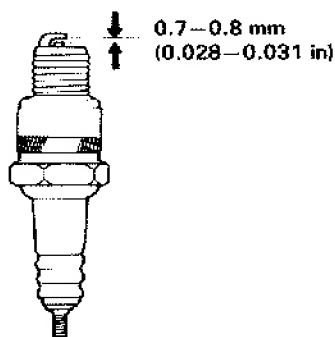
To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

#### 1. Remove the spark plug.

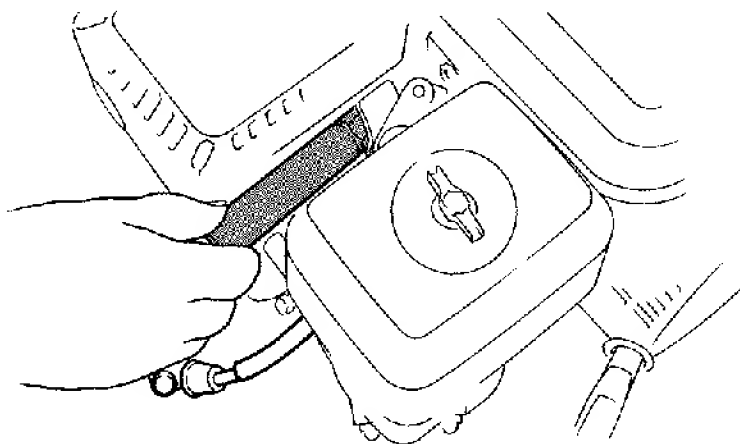
**WARNING** If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.



2. Visually inspect the spark plug. Discard it if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.
3. Measure the plug gap with a feeler gauge. The gap should be 0.6–0.7 mm (0.024–0.028 in). Correct as necessary by bending the side electrode.



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4. Attach the plug washer. Thread the plug in by hand to prevent cross-threading.

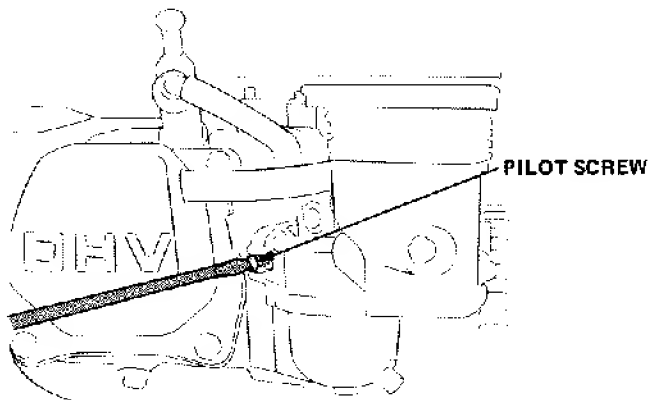


5. Tighten a new spark plug  $1/2$  turn with the wrench to compress the washer. If you are reusing a plug, it should only take  $1/8$ – $1/4$  turn after the plug seats.

**CAUTION:** The spark plug must be securely tightened. An improperly tightened plug can become very hot and possibly damage the engine. Never use a spark plug with an improper heat range.

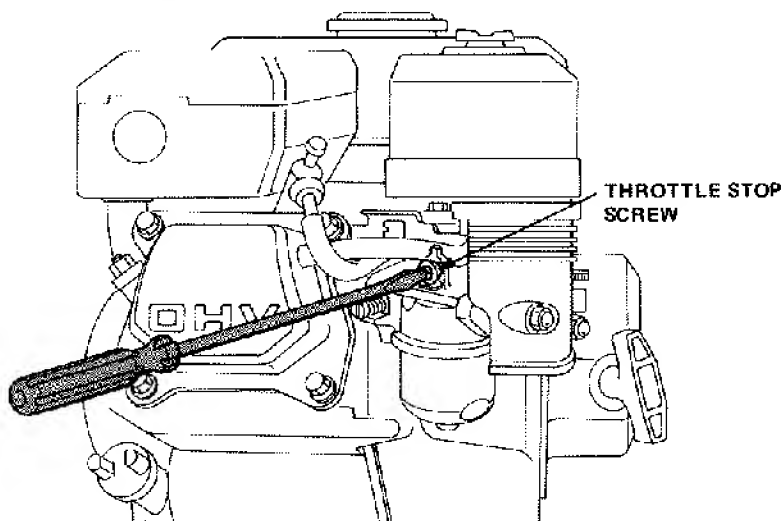
#### 4. Adjusting carburetor screws

1. Start the engine and warm up it to the normal operating temperature
2. With the engine idling, turn the pilot screw in or out to the setting that produces the highest idle rpm. The correct setting will usually be approximately 3 turns out for the WA20X, and 1-5/8 turns out for the WA30X from the fully closed position.



3. After the pilot screw is correctly adjusted, turn the throttle stop screw to obtain the standard idle speed.

Standard idle speed:  $1,400 \pm 150$  rpm



## 8. TRANSPORTING/STORAGE

**WARNING** When transporting the pump, turn the fuel valve OFF and keep the pump level to prevent fuel spillage. Fuel vapor or spilled fuel may ignite.

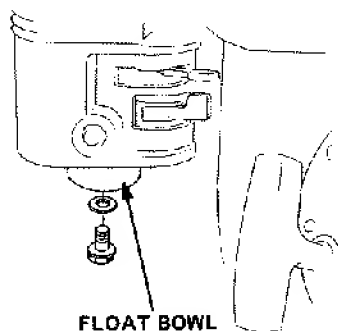
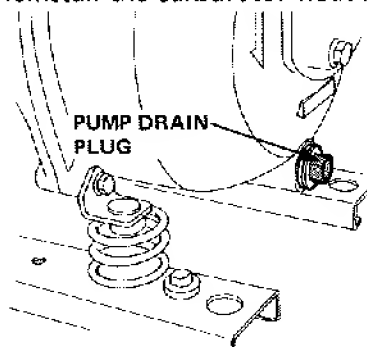
Before storing the pump for an extended period;

1. Be sure the storage area is free of excessive humidity and dust.
2. Clean the pump interior. . . .

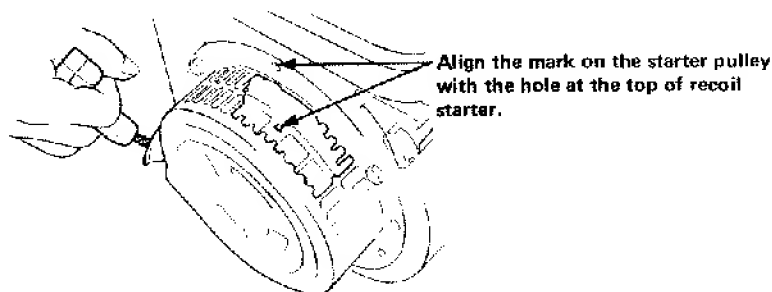
Sediment will settle in the pump if it has been used in muddy or sandy water, or water containing heavy debris. Pump clean water through the pump before shutting down or impeller may be damaged when restarting.

3. Drain the fuel. . . . .

- a. With the fuel valve OFF, remove the carburetor float bowl and drain the carburetor. Drain the gasoline into the suitable container.
- b. Turn the fuel valve ON and drain the gasoline in the fuel tank into the suitable container.
- c. Reinstall the carburetor float bowl.



4. Pull the starter grip until resistance is felt: the piston is coming up on its compression stroke. At this position, the exhaust and intake valves are closed, and this will help protect the engine from corrosion.



5. Change engine oil.

## 9. TROUBLESHOOTING

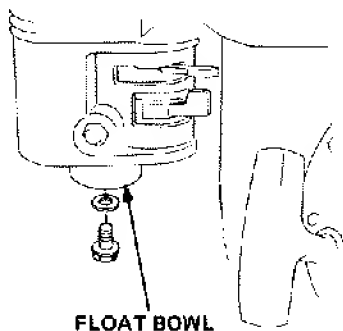
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When the engine will not start;

1. Is there enough fuel?
2. Is the fuel valve on?
3. Is gasoline reaching the carburetor?

To check, remove the float bowl with the fuel valve on.

**WARNING** If any fuel is spilled, make sure the area is dry before testing the spark plug or starting the engine. Fuel vapor or spilled fuel may ignite.

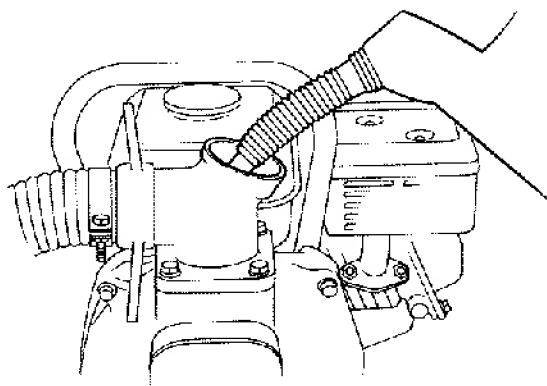


4. Is the engine switch ON?
5. Is there a spark at the spark plug?
  - a. Remove the spark plug cap. Clean any dirt from around the spark plug base, then remove the spark plug.
  - b. Install the spark plug in the plug cap.
  - c. Turn the engine switch on.
  - d. Grounding the side electrode to any engine ground, pull the recoil starter to see if sparks jump across the gap.
  - e. If there are no sparks, replace the plug.  
If OK, try to start the engine according to the instructions.
6. If the engine still does not start, take the pump to an authorized Honda dealer.

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When the pump cannot pump water;

1. Is the pump fully primed?



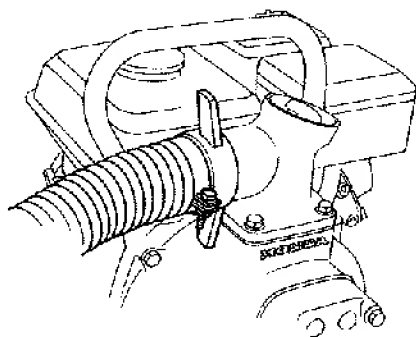
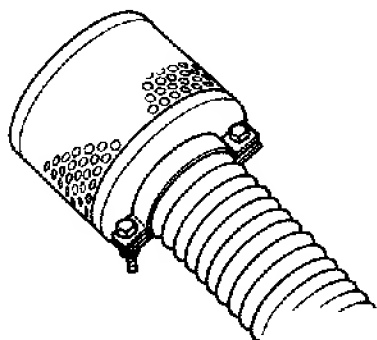
2. Is the strainer clogged?

3. Are the hose bands installed securely?

4. Are the hoses damaged?

5. Is the suction head too high?

6. If the pump still does not pump the water, take the pump to an authorized Honda dealer.



## 10. SPECIFICATIONS

### Dimensions and Weight

Model	WA20X	WA30X
Length x Width x Height	490 x 360 x 445 mm (19.3 x 14.2 x 17.5 in)	620 x 410 x 485 mm (24.4 x 16.1 x 19.1 in)
Dry weight (mass)	25.5 kg (56.2 lb)	35.5 kg (78.3 lb)

### Engine

Model	GX110	GX140
Engine type	4-stroke, over head valve, 1 cylinder	
Displacement [Bore x Stroke]	107 cc (6.5 cu in) [57 x 42 mm (2.2 x 1.7 in)]	144 cc (8.8 cu in) [64 x 45 mm (2.5 x 1.8 in)]
Max. output	3.5 PS/3,600 rpm	5.0 PS/3,600 rpm
Max. torque	0.7 kg-m (5.2 ft-lb)/ 2,800 rpm	1.0 kg-m (7.7 ft-lb)/ 2,800 rpm
Fuel consumption	230 g/PS h	230 g/PS h
Cooling system	Forced air	
Ignition system	Transistor magneto	
PTO shaft rotation	Counterclockwise	

### Pump

Suction port diameter	50 mm (2 in)	80 mm (3 in)
Discharge port diameter	50 mm (2 in)	80 mm (3 in)
Rated revolutions	3,600 rpm	3,600 rpm
Total head	30 m (98 ft)	28 m (92 ft)
Suction head	8.5 m (28 ft)	8.5 m (28 ft)
Capacity	600 ℓ (159 US gal)/min	1,100 ℓ (291 US gal)/min
Self-priming time	45 sec at 5 m (16.5 ft)	120 sec at 5 m (16.5 ft)
Continuous running time	3h 10 min	2h 40 min

## 11. WARRANTY SERVICE

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### Owner Satisfaction

Your satisfaction and goodwill are important to your dealer and to us. All Honda warranty details are explained in the Distributor's Limited Warranty. Normally, any problems concerning the product will be handled by your dealer's service department. If you have a warranty problem that has not been handled to your satisfaction, we suggest you take the following action:

- Discuss your problem with a member of dealership management. Often complaints can be quickly resolved at that level. If the problem has already been reviewed with the Service Manager, contact the owner of the dealership or the General Manager.
- If your problem still has not been resolved to your satisfaction, contact the Customer Relations Department of American Honda Motor Co., Inc.

American Honda Motor Co., Inc.  
Customer Relations Department  
P.O. Box 420  
Gardena, California 90247-0842  
Telephone: (213) 604-2400

We will need the following information in order to assist you:

- Your name, address, and telephone number
- Product model and serial number
- Date of purchase
- Dealer name and address
- Nature of the problem

After reviewing all the facts involved, you will be advised of what action can be taken. Please bear in mind that your problem will likely be resolved at the dealership, using the dealer's facilities, equipment, and personnel, so it is very important that your initial contact be with the dealer.

Your purchase of a Honda product is greatly appreciated by both your dealer and American Honda Motor Co., Inc. We want to assist you in every way possible to assure your complete satisfaction with your purchase.



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## MEMO



**HONDA**  
HONDA MOTOR CO., LTD. TOKYO, JAPAN

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